

not yet sufficiently known to be dealt with in any other fashion than that of the threefold classification of Ramsay, Jamieson, and Lyell. The refinements on this classification attempted by several authors are based upon phenomena which have not yet been proved to be other than local.

One of the more interesting sections of this memoir relates to the growth and accumulation of peat; the author's conclusion that the rate at which peat grows is very uncertain and dependant on local conditions, is confirmed by the recent researches of Dr. Angus Smith, and his observations regarding the manner in which forests have been destroyed by its growth are probably true. The presence, however, of large oaks at great elevations in Britain need not necessarily "point to warmer summers than at present," but may be accounted for by the fact of their having grown in a primeval forest, one under the shelter of another, thus attaining a height and reaching a size which they could not do on our bare hills exposed to the high winds. An example of this may be seen in the fine tall trees growing in the sheltered valley in which Furness Abbey stands, as compared with the stunted growth on the exposed hill-sides around. Nor can the Scotch firs on the peat of the south of England be taken to prove the inclement winters of the prehistoric period, since they now flourish also in the south of England at levels but little above the sea. For the same reason also the peat bogs cannot be looked upon as proving a lower temperature then than now. In Somersetshire the turf moss extending from Glastonbury to Highbridge is growing at the rate of from 4 to 6 feet in fifteen years, so that the places where the peat is cut are filled up in that time. These, however, are unimportant points in a valuable memoir which deals with the district in a very comprehensive manner and in a small space.

It should be remarked, in conclusion, that the price of 17s. for a small octavo of 139 pp. in paper wrappers is without precedent and unreasonable, and that the policy of absurdly high prices for Survey Memoirs, which, as it appears from the two last publications, is being pursued by the Stationery Office, is certain to restrict the sale, and thus render them comparatively useless. They cannot be expected to pay their cost any more than the Reports of Parliamentary Commissions; they ought to be issued at a mere nominal sum, and distributed with a liberality like that shown in similar cases by the American Government.

W. BOYD DAWKINS

SCIENTIFIC HORTICULTURE

The Parks and Gardens of Paris. By W. Robinson, F.L.S. Second Edition, Revised. (London: Macmillan and Co., 1878.)

THE Science of Horticulture are words often used and too often misused. That there is science in horticulture, or that it is capable of being based on scientific principles, cannot be denied. There is sufficient in the cultivation of plants and flowers, and in their proper disposition in the garden, to occupy a highly refined and cultivated intellect. A garden, according to its dimensions and capabilities, has always been, and is still,

more or less a delight to its owners. Like everything else, the taste exercised in the science of gardening has in different ages shown itself in various ways. The hideous clipping of hedges and shrubs into the forms of animals, birds, &c., still occasionally to be seen in some old English gardens, are records of one of the worst periods of gardening in this country, and the modern system of carpet or ribbon bedding, aptly termed by Mr. Robinson the "coloured cotton handkerchief" style, is not one whit more defensible, but rather, we should say, even more reprehensible, considering what has been done and written of late with the view of elevating public taste in matters of science and art generally.

To no book can we point with so much satisfaction on the subject of laying out or grouping plants or trees in parks or gardens as to that which now lies before us. No writer on this, or on kindred subjects, has discoursed more pleasantly than has Mr. Robinson. That his theme has inspired his pen as that of a ready writer is self-evident; and that he is a true lover of plants for their own sake is also apparent from his frequent references to individual species. But he is something more than this, for it will be found from a perusal of his book that he possesses a thorough knowledge of his subject.

It must not be imagined from the title of the book that the parks and gardens of Paris are, in their entirety, held up for our admiration and imitation. On the contrary the author distinctly points out, and separates the good from the bad, the true from the false, retaining, so to speak, the wheat and consuming the chaff with the fire of a powerful criticism. Notwithstanding this, there can be no two opinions as to the general superiority of the French capital over that of our own in point of picturesque beauty. No visitor to Paris—and no one probably has ever visited that city without visiting also the Bois de Boulogne—can have failed to compare in his own mind the sylvan beauty of the Bois, and the ragged uncared-for appearance of our own London parks; and the contrast is even greater in the squares and gardens of the two capitals, and yet as Mr. Robinson points out, there are excellent sites and splendid opportunities in London to make it a city suitable for other purposes besides those of business and toil. To properly effect this of course architecture and horticulture must join hands. Nevertheless much depends upon a proper provision by the architect for the horticulturist and landscape gardener to exercise their skill. As an illustration of how this may be done, Mr. Robinson draws attention to the new avenue between the new Opera House and the Rue de Rivoli in Paris, and points out that they "have not only been made without cost to the town, but even with a balance on the right side, the vastly increased value of sites for business premises in these new and noble streets having more than repaid the cost of their formation and the removal of the old houses through which they were driven. Abroad, every little capital possessing enough interest to occupy one for two hours, is furbishing up its attractions, while we in London are neglecting advantages the like of which are not possessed by any other city in Europe. The river, the bridges, the suburbs, the surroundings are infinitely superior to Paris, but owing to stupid absence of plan many of the good points are lost, many of the best suburbs being unknown ground even

to thousands of Londoners owing to the impossibility of reaching them without struggling through narrow and mean streets and roads."

The first chapter of Mr. Robinson's book opens with a consideration of the Bois de Boulogne, and from it we may learn much that is good both in the way of artistic grouping, planning, and in the selection of individual plants. Unlike what we too often see in public parks and gardens, the vegetation along the banks of the lakes in the Bois is properly diversified, "so that at one place we meet with conifers, at another rock shrubs, at another magnolias, and so on, without the eternal repetition of common things which one too often sees." The author next proceeds to point out the great advantage of permanent planting over that of plants which show only a fleeting annual display. In spring the early bloom and budding leaves are in themselves things of beauty, and are even more so when seen collectively or in company with each other. In summer they furnish an infinite variety of form and consequent depth of tone, while in autumn "the number and richness of the tints of the foliage afford a varied picture from week to week, and in winter the many graceful forms of the deciduous trees among the evergreen shrubs and pines offer as much to interest an observant eye as at any other season."

On the subject of sub-tropical gardening, which is well exemplified in the Park Monceau, the author writes in his pleasantest manner, as the following extract will show:—"We may be pleased by the wide spread of purple on a heath or mountain, but when we go near and examine it in detail we find that its most exquisite aspect is seen in places where the long moss cushions itself beside the Ling, and the fronds of the Polypody peer forth around little masses of heather. Everywhere we see nature judicious in the arrangement of her highest effects, setting them in clouds of verdant leafage, so that monotony is rarely produced—a state of things which it is highly desirable to attain, as far as possible, in the garden. We cannot attempt to reproduce this literally, nor would it be wise or convenient to do so; but assuredly herein will be found the chief source of true beauty and interest in our gardens; and the more we keep this fact before our eyes the nearer will be our approach to truth and success.

"We should compose from nature, as landscape artists do. We may have in our gardens—and without making wildernesses of them—all the shade, the relief, the grace, the beauty, and nearly all the irregularity of nature. This bold growth of 'fine-foliaged plants' has shown us that one of the greatest mistakes ever made in the garden was the adoption of a few varieties of plants for culture on a vast scale, to the exclusion of interest and variety, and too often of beauty or taste. We have seen how well the pointed, tapering leaves of the cannas carry the eye upwards; how refreshing it is to cool the eyes in the deep green of those thoroughly tropical castor-oil plants, with their gigantic leaves, how noble the Wigandia, with its fine texture and massive outline looks, after we have surveyed brilliant lines and richly painted leaves; how, too, the bold tropical palm leaves beautify the garden. In a word, the system has shown us the difference between the gardening that interests and delights all beholders, and not the horticulturist only, and that which is too

often offensive to the eye of taste and pernicious to every true interest of what has been called 'the purest of human pleasures.'"

Notwithstanding the general interest kept up throughout Mr. Robinson's book, no part is of greater interest than the chapter on the cultivation of mushrooms in the caves under Paris, where, at a depth of from sixty to eighty feet below the surface of the ground, in old stone quarries, this edible fungus is grown systematically on a very large scale. These caves furnish not only the daily supply of the Paris markets, but to a large extent those of England and other countries also, preserved mushrooms to the extent of 14,000 boxes annually being exported to this country by one house alone. It is estimated that in and around Paris the daily production of mushrooms amounts to about twenty-five tons, of the value of about 1,000*l.*, or close upon 400,000*l.* per annum. One large grower near St. Denis is described as employing nineteen horses and fifty men. Mushrooms are very extensively used in France, not only in their fresh state, but preserved in various ways, either by tinning, bottling, preserving in butter or oil, or reducing to powder.

The book is exceedingly well printed and carefully got up.

OUR BOOK SHELF

Elements of Physiography. By Prof. D. T. Ansted, M.A., F.R.S. (Allen and Co.)

WE are glad to see a book on physiography from the pen of Prof. Ansted, whose name has so long been associated with the literature of physical geography. If the new subject, however, is to be treated as it is in the present work, we fail to see the advantage of any change. The distinctive parts of physiography are all got through in an introduction of some eighteen pages, which we fear are too much written up to the *ipsissima verba* of the syllabus issued by the Science and Art Department to be of much educational value.

And, in fact, it is on this point that we find most fault with the book. Take these two paragraphs concerning aqueous vapour, pp. 101, 102, and note the absence of the why in every case.

"Aqueous vapour is frequently rendered visible as mist, fog, or cloud. These are varieties of the same condition. Mist is formed when currents of air of different temperature, both containing invisible vapour, meet near the earth. In valleys such mixtures are very frequent, and in mountainous countries very striking. Fogs are formed in the same way in temperate climates at various seasons, and hang over shores and the mouths of certain streams.

"Clouds are produced when mixtures of currents take place at some distance above the ground, and the visible vapour is entirely detached from the earth. There are several varieties of clouds, some floating at a height of many miles, some hovering in large masses in mid-air, some drooping downwards and almost touching the earth. They are rarely alike long together. They assume, as we know, the most fantastic shapes, and are occasionally decorated with brilliant tints of colour! It is only the clouds that form in large masses and approach the earth that dissolve into heavy and long-continued rain, but all clouds are capable of yielding rain, and drops sometimes, though rarely, fall through air perfectly clear and cloudless."

A student had better not be taught at all than be taught in this manner, and, in fact, a student of average intelligence, after reading such a string of assertions without the least